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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,196	03/16/2005	Masaru Nonomura	2005_0057A	8680
52349 7590 07/21/2008 WENDEROTH, LIND & PONACK L.L.P. 2033 K. STREET, NW SUITE 800 WASHINGTON, DC 20006				
EXAMINER				
ABOAGYE, MICHAEL				
ART UNIT		PAPER NUMBER		
1793				
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07/21/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/523,196

**Applicant(s)**

NONOMURA ET AL.

**Examiner**

MICHAEL ABOAGYE

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 May 2008.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 44-83 is/are pending in the application.  
4a) Of the above claim(s) 54-83 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 44-53 is/are rejected.  
7) ☒ Claim(s) 45 and 48 is/are objected to.  
8) ☒ Claim(s) 44-83 are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 01/27/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date 01/27/05, 02/12/07.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application.  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Species 1A (claims 44-53) in the reply filed on May 15, 2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Claim Objections***

2. Claims 45 and 48 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 44 set forth thermal analysis in a single heating furnace. Claims 45 and 48 depend from claim 44, therefore claims 45 and 48 requiring a plurality of furnaces, fails to further limit claim 44.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 44-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 44-48 recite the limitation "invariable" which

is further designated as m and defined in claim 51. Said "invariable" as defined in claim 51 is time dependent and also in the specification assigned a plurality of values. It is therefore clear to the examiner that said m cannot be a constant but rather varies in value. It is therefore unclear as to how said m can be claimed as an invariable. The claims are therefore rendered indefinite with their scope unascertainable.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 44-50 insofar as definite (in view of the 35 U.S.C. 112, second paragraph rejections) are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuo et al. (US Patent No. 5,003,160).

Matsuo et al. discloses a method of thermal analysis of an object (10, figure 1) transported on a conveyor through a reflow furnace; obtaining a variable furnace heating condition or control data by measuring with time the temperature of the furnace and the temperature at several points of an object at plurality of location of a heating furnace as the conveyor traverses the length of the reflow furnace and establishing time temperatures profile for the object (column 4, lines 7-18, column 6, lines 41-64). (Note the examiner interprets the measured temperature as the heating characteristic of the object and the furnace); wherein the time temperature profile of the object is

determined periodically and variance in said profile utilized as an indicator of changes of the physical characteristics and/or defects of the heating furnace (column 7, lines 40-60).

Matsuo et al. also teaches utilizing the measured data to simulate the time temperature profile on the object and comparing said simulated profile with the actual profile and utilizing any inconsistencies between the two profile as an indicative of control system failure or defection in the furnace heating means (column 7, lines 40-66)

Matsuo et al., besides measuring the heating temperature, heating time, as the control data (note the examiner interprets the control data to be the same as the applicant's claimed heating conditions) also measures a transfer speed of the object in the heating furnace (column 4, lines 7-24). It is also noted that the method of Matsuo et al. can also be used to conduct thermal analysis of a plurality of furnaces in a similar way as claimed by the applicant by mere construction of said single furnace in series forming a multiple; also the applicant in his disclosure provides no special method step that distinguishes a single furnace from multiple furnaces.

***Allowable Subject Matter***

7. Claims 51-53 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record fail to teach a heating characteristic value by the specific

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mathematical relations, the characteristic  $m$  value and its algebraic relationship with temperature and time and other claimed features.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Thakur (US 5561612), Yamaoka (US 6619531) and Shajji et al. (US 6610968) are also cited in PTO-892.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL ABOAGYE whose telephone number is (571)272-8165. The examiner can normally be reached on Mon - Fri 8:30am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on 571-272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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